

- Oenothera biennis* L.
Kneiffia pumila (L.) Spach.
Aralia hispida Vent.
Cicuta bulbifera L.
 " *maculata* L.
Sium cicutaefolium Gmel.
Cornus Amonum Mill.
Clethra alnifolia L.
Chimaphila umbellata (L.) Nutt.
 " *maculata* (L.) Pursh.
Rhododendron nudiflorum (L.) Torr.
Kalmia latifolia L.
Lysimachia quadrifolia L.
Bartonia virginica (L.) BSP.
Asclepias pulchra Ehrh.
Verbena hastata L.
Scutellaria lateriflora L.
Brunella vulgaris L.
Koellia virginiana (L.) Mac M.
Lycopus americanus Muhl.
 " *virginicus* L.
Mentha arvensis L.
- Ilysanthes attenuata* (Muhl.) Small.
 " *gratioloides* (L.) Benth.
Gerardia paupercula (Gray) Britton.
 " *purpurea* L.
Plantago aristata Michx.
Cephalanthus occidentalis L.
Galium asprellum Michx.
Viburnum cassinoides L.
 " *dentatum* L.
Campanula aparinoides Pursh.
Lobelia cardinalis L.
 " *inflata* L.
Vernonia noveboracensis (L.) Willd.
Chrysopsis falcata (Pursh) Ell.
Solidago odora Ait.
 " *puberula* Nutt.
 " *ulignosa* Nutt.
Anaphalis margaritacea (L.) B. & H.
Leontodon autumnale L.
Hieracium Gronovii L.
 " *scabrum* Michx.

PROVIDENCE, RHODE ISLAND.

THE RETROGRADE COLOR VARIETIES OF GRATIOLA AUREA.

HARLEY HARRIS BARTLETT.

AT Winter Pond in Winchester, Massachusetts, occurs one of the most typical examples of what Blankinship designates in his "Plant-formations of Eastern Massachusetts" as the "Sand-Pond Margin Formation." Its flora is here unusually well developed, containing in addition to the plants enumerated by Blankinship about twenty others, equally characteristic of the formation. One of these, *Gratiola aurea* Muhl., occupies considerable areas of the low, gravelly shore, frequently to the almost complete exclusion of other plants. It occurs here not only in its typical golden-yellow-flowered form, but also in two well marked color forms the flowers of which are respectively honey-yellow and white.

Two published references to these forms have been found, the earlier of them, in John Robinson's "Flora of Essex County, Massachusetts," to the effect that "There is a white variety of this species which grows in Bowler Swamp, Lynn," the other, in Dame and Collins's "Flora of Middlesex County, Massachusetts," to the effect that "The white variety has been found at Winchester by W. H. Manning; both the white and light yellow varieties at Westfield, by Dr. Swan." In the Gray Herbarium there is a sheet of specimens collected by Dr. Swan in a swamp near Lowell, Mass., on which is written, in Dr. Gray's hand,—"*Gratiola aurea* vars. Ordinary golden-yellow. Pale yellow! White-flowered! in small quantity."

The two forms, as observed at Winter Pond, are absolutely distinct, without intermediates linking them either to the parent form or to each other. They occur in pure colonies, several of which have been under observation for three years, during which time they have been visited at various dates between July 1st and Sept. 15th, an interval which practically covers the flowering period of the species. Never has the honey-colored form been found in a white colony, nor vice versa, although this might be expected to happen occasionally through the casualties of seed dispersal.

The forms may be named: ***Gratiola aurea* f. *helveola*** f. nov. a forma typica recedit floribus albogilvis, corollae limbo quam tubo pallidiore.—Type (in Herb. Gray) collected by *Dr. C. W. Swan* at a swamp near Lowell, Mass. ***Gratiola aurea* f. *leucantha*** f. nov. a forma typica floribus clare albis differt.—Type (in Herb. Gray) *Bartlett 820*, Winter Pond, Winchester, Mass., 7 July 1907.

The significance of these forms (retrograde varieties of de Vries) as throwing light upon the origin of specific distinctions is clear at once when the flower-color of the other American species of § *Gratiolaria* is examined. (The often purple-flowered § *Sophronanthe* may be left out of consideration on the ground of its great habital diversity.) We find: I) Species with golden-yellow flowers,—*G. aurea* Muhl., *G. Torreyi* Small and *G. pusilla* Torr. II) Species with flowers merely yellowish, the limb often white or whitish,—*G. gracilis* Benth., *G. floridana* Nutt., *G. virginiana* L., *G. viscosa* Schwein., *G. Drummondii* Benth. *G. ramosa* Walt. and *G. ebracteata* Benth. III) Species with white flowers,—*G. sphaerocarpa* Ell. and *G. macrantha* Chapm.

f. helveola corresponds to the second section in the above grouping, *f. leucantha* to the third. The golden-yellow color of the first group

is the resultant of two yellow elements, by the loss of which, either together or singly, retrogression may take place.

MEETING OF THE JOSSELYN BOTANICAL SOCIETY.—The thirteenth field meeting of the Josselyn Botanical Society of Maine was held at Oxford, Maine, from July 1st to 6th. Owing to various circumstances, there was a very small attendance, but those present found ample material to reward their efforts. The localities of especial interest were the low woods and sandy plains surrounding Whitney Pond, the rocky wooded shores of Thompson Lake, and the extensive arbor-vitae swamps in the town of Norway. The local botanists were very kind in pointing out localities of special interest; Mr. George R. Howe of Norway placing on exhibition his large collection of gems, insects, and other objects of natural history, as well as guiding the party on the trip to the Norway bogs. Mr. W. L. Bacon showed a large collection of the ferns of the region, including many of more than local interest.

A list of all the flowering plants and ferns seen or collected has been kept, and will be published later; the following list, therefore, represents only the plants of unusual interest. On the sand-plain near Whitney Pond large patches of *Lupinus perennis*, L., were found with *Corylus Americana*, Walt. and *Convolvulus spithameus* L. This is the first undoubted station for the Lupine in Maine, the record previously depending upon a report in the first edition of the Portland Catalog, (1868). Stations for *Aspidium cristatum clintonianum*, D. C. E., *Habenaria blephariglottis*, Torr., *Medicago denticulata* Willd., and *Erodium cicutarium*, L'Her., were found in Oxford; on the Norway trip, *Cystopteris bulbifera*, Bernh., *Cyrtopodium spectabile*, Salisb., *Habenaria hyperborea*, R. Br., and *Arceuthobium pusillum*, Peck. were found in abundance. The Dwarf Mistletoe was also found in a bog in Casco, Cumberland Co., with *Woodwardia Virginica*, Smith, and two plants of *Habenaria macrophylla*, Goldie, were secured in Otisfield.—EDWARD B. CHAMBERLAIN, Cumberland Center, Maine.

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